GNEDENKO, B.V. (Moskva)

Wonderful monument to the outstanding scholar and educator.
Mat. v shkole no.3:87 My-Je '62. (MIRA 15:7)
(Ostrogradskii, Mikhail Vasil'evich, 1801-1861)

SORIN. Ya.; BRUYEVICH, N.G., akademik; GNEDENKO, B.V., akad.; SIFOROV, V.I.; SOTSKOV, B.S.

Precise, strong and lasting. Znan.-sila 37 no.5:10-16 My '62.
(MIRA 15:9)

1. Predsedatel' komiteta Vsesoyuznogo soveta nauchno-tekhnicheskikh obshchestv po nadezhnosti i kontrolyu kachestva (for Sorin).
2. Akademiya nauk Ukrainskoy SSR (for Gnedenko). 3. Chleny korrespondent AN SSSR (for Siforov, Sotskov).
(Quality control)

GNEDENKO, Boris Vladimirovich; POGREBYSSKIY, Iosif Benediktovich;
ZAYTSEVA, A.V., red.izd-va; NOVICHKOVA, N.D., tekhn.
red.; ZUDINA, V.I., tekhn. red.

[Mikhail Vasil'yevich Ostrogradskii; his life and work as a scientist and teacher, 1801-1862] Mikhail Vasil'evich Ostrogradskii, 1801-1862; zhizn' i rabota, nauchnoe i pedagogicheskoe nasledie. Moskva, Izd-vo AN SSSR, 1963. 269 p.
(MIRA 17:1)

GNEDENKO, B.V. (Moskva)

The beginnings of numeration. Mat. v shkole no.4:5-20 Jl-Ag '63.
(MIRA 16:9)

(Numeration)

GNEDENKO, B.V. (Moskva)

Introductory lecture. Mat. v shkole no.1:3-13 Ja-F '63.
(MIRA 16:6)
(Mathematics)

GNEDENKO, B.V.

Limits; intuitive exposition of the theory of limits recommended for the 11th grade. Mat. v shkole no.2:69-74 Mr-Ap '63. (MIRA 16:4)
(Calculus—Study and teaching)

GNEDENKO, B.V. (Moskva); KOLUZHNINE, L. [Kalouzhnine, L.] (Berlin); RAICHEV, R. [translator].

Struggle between materialism and idealism in mathematics. Pt.1. Mat i fiz Bulg 6 no.1:1-9 Ja-F'63.

GNEDENKO, B.V. (Moskva); KALOUZHNINE, L. (Berlin); BAICHEV, R., inzh.
[translator]

Struggle between materialism and idealism in mathematics. Pt.2.
Mat i fiz Bulg 6 no.2:1-5 Mr-Ap '63.

GNIEDENKO, B.W. [Gnedenko, B.V.] (Moskwa)

Certain problems of cybernetics and statistics. Rocz wiad matem 7 no.1:65-85 '63.

GNEDENKO, B.V.

A.N.Kolmogorov's studies on the theory of probability. Usp. mat.
nauk 18 no.5:5-11 S-O '63. (MIRA 16:12)

ALEKSANDROV, P.S.; GNEDENKO, B.V.

A.N.Kolmogorov as a teacher. Usp. mat. nauk 18 no.5:115-120 S-0 '63. (MIRA 16:12)

GNEDENKO, B.V., akademik

Programmed training. Mor. sbor. 46 no.5:13-20 My '63. (MIRA 17:1)

1. Akademiya nauk UkrSSR.

GNEDENKO, B. V.

"Les questions de reservation dans les systemes complexes."

report submitted for 4th Intl Cong, Cybernetics, Namur, Belgium, 21-25 Oct 64.

GNEDENKO, Boris Vladimirovich; KHINCHIN, Aleksandr Yakovlevich;
GORYACHAYA, M.M., red.

[Elementary introduction to the theory of probability]
Elementarnoe vvedenie v teoriiu veroiatnostei. Izd.6.
Moskva, Nauka, 1964. 142 p. (MIRA 18:5)

BERG, A.I., akademik, red.; BRUYEVICH, N.G., akademik, red.; GNEDENKO, B.V., akademik, red.; [illegible], V.I., red.

[Cybernetics in the service of communism] Kibernetiku na sluzhbu kommunizmu. Moskva, Energiia. Vol.2. [Theory of reliability and the queueing theory] Teoriia nadezhnosti i teoriia massovogo obsluzhivaniia; sbornik statei. 1964. 367 p. (MIRA 17:11)

1. Akademiya nauk SSSR (for Berg, Bruyevich, Gnedenko).

L 11347-65 EWT(1)/EEC(b)-2/EWA(h) Pm-4/Po-4/Pq-4/Pg-4/Pi-4/Pab
S/0280/64/000/004/0003/0012

ACCESSION NR: AP4044817

B

AUTHOR: Gnedenko, B. V. (Moscow).

25

TITLE: On the two-unit redundant system with a cold reserve

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1964, 3-12

TOPIC TAGS: two unit redundant system, cold reserve redundant system, no failure operation time, no failure operation time distribution

ABSTRACT: The nonfailure operating time of a two-unit redundant system with a cold reserve is analyzed under the assumption that the repair of the basic unit after its failure begins instantly, while it is replaced by a redundant unit. For determining the distribution of the nonfailure operating time and the mean time between two failures, various approaches are presented. The formula for the mean time between two failures is derived under very general assumptions. Two formulas for calculating mean nonfailure operating time are derived under the following assumptions: a) The operating parameters of the

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L 11347-65
ACCESSION NR: AP4044817

0

unit after its failure are completely restored, the distribution functions F(x) of nonfailure operating time for the basic and redundant systems are equal, and the distribution law G(x) for the restoration time of the units is given. b) Characteristics of the basic and redundant units are different, and the operating characteristics of the unit after its failure are completely restored, but the restoration time for both units is different. The application of the formulas derived for particular F(x) and G(x) functions is presented. The method for calculating the probability R(t) of the nonfailure operation of the redundant system during the period of time t and the distribution A(t) of the nonfailure operation is presented. For A(t), the formula derived is applied to cases with conditions (a) and (b). An integral equation for determining R(t) is also derived. Orig. art. has: 18 formulas.

ASSOCIATION: none

SUBMITTED: 18May64 ATD PRESS: 3108 ENCL: 00

SUB CODE: MA NO REF SOV: 001 OTHER: 002

Card 2/2

L 17517-65 EWT(1)/EEC(b)-2/EWA(h) Pm-4/Po-4/Pq-4/Pg-4/Peb/Pi-4
ACCESSION NR: AP4048829 S/0280/64/000/005/0111/0118

AUTHOR: Gnedenko, B. V. (Moscow)

TITLE: On two-equipment standby redundancy with restoration

15

SOURCE: AN SSSR. Izv. Tekhnicheskaya kibernetika, no. 5, 1964, 111-118

TOPIC TAGS: standby redundancy, redundant system reliability, two equipment redundant system, failure free operation time

25

ABSTRACT: The reliability of a two-equipment standby redundant system is analyzed under the following conditions: 1) after failure of on-line equipment, standby equipment is immediately switched on-line; 2) the equipment that has failed is taken off-line and immediately made available for repair; 3) the properties of repaired equipment are completely restored; 4) the restoration time is a random value with the distribution function $G(x)$; 5) the restored equipment is put on a standby status; 6) the failure-free operation time of the system is a random value with the distribution function $F(x) = 1 - \exp(-\lambda x)$ $(\lambda > 0)$ for the on-line equipment and the distribution function $F_1(x) = 1 - \exp(-\lambda_1 x)$; $(\lambda_1 \geq 0)$ for the standby equipment. A method is presented for determining the distribution $G(x)$ of the failure-free operation time of the two-equipment standby redundant system. The

Card 1/2

L 17517-65
ACCESSION NR: AP4048829

Laplace transform $L(x)$ of $G(x)$ is obtained from a formula derived previously by other authors and the mean time of failure-free operation of the system is established. Two limit theorems establishing the asymptotic properties of the mean time of failure-free operation are proved under the assumption that the time required for storing the equipment is considerably smaller than the failure-free operation time of the system. Orig. art. has: 8 formulas.

ASSOCIATION: none

SUBMITTED: 15Jul64	ENCL: 00	SUB CODE: DP, MA
NO REF SOV: 005	OTHER: 001	ATD PRESS: 3152

Card 2/2

GNEDENKO, B.V. (Moskva)

Duplication with restoration. Izv. AN SSSR. Tekh. kib. no.5:
111-118 S-O '64. (MIRA 17:12)

GNEDENKO, B.V.

Statistical methods in the theory of reliability. Standartizatsiia 28 no.6:16-22 Je '64. (MIRA 17:9)

1. Deystvitel'nyy chlen AN UkrSSR.

GNEDENKO, B.V.

Criterion of signs. Doklady BAN 17 no.9:793-796 '64.

1. Submitted May 6, 1964.

KELER, V.R., otv. red.; MILLIONSHCHIKOV, M.D., akademik, red.;
BLOKHIN, N.N., red.; BLOKHINTSEV, D.I., red.; GNEDENKO,
B.V., akademik, red.; ZAYCHIKOV, V.N., red.; KELDYSH, M.V.,
akademik, red.; KIRILLIN, V.A.. akademik, red.; KORTUNOV,
V.V., red.; MONIN, Andrey Sergeyevich, prof., doktor fiz.-
matem. nauk, red. (1921); NESMEYANOV, A.N., akademik, red.;
PARIN, V.V., red.; REBINDER, P.A., akademik, red.; SEMENOV,
N.N., akademik, red.; FOK, V.A., akademik, red.; FRANTSOV,
G.P., akademik, red.; ENGEL'GARDT, V.A., akademik, red.;
KREMNEVA, G., red.; BALASHOVA, A., red.; BERG, A.I., akademik, red.

[Science and mankind, 1964; simple and precise information about the principal developments in world science] Nauka i chelovechestvo, 1964.; dostupno i tochno o glavnom v mirovoi nauke. Moskva, Izd-vo "Znanie," 1964. 424 p.
(MIRA 18:1)

1. Deystvitel'nyy chlen AMN SSSR (for Blokhin, Parin). 2. Chlen-korrespondent AN SSSR (for Blokhintsev). 3. Akademiya nauk SSSR Ukr.SSR (for Gnedenko).

[illegible]

[illegible] in the theory of [illegible] Nauk
SSR 7 no.2:[illegible]-134 '6[illegible].

1. University of Moscow. Member of the Ukrainian Academy of Sciences.

[illegible]

[illegible]

GNEDENKO, B.V., akademik; ZUBKOV, M.N.

Determining the optimum number of berths. Mor. sbor. 47 no.6:30-39 Je '64. (MIRA 18:7)

GNEDENKO, Boris Vladimirovich; GOR'KOV, Yu.A., red.

[Course in probability theory] Kurs teorii veroiatnostei. Moskva, Nauka, 1965. 400 p. (MIRA [illegible])

L 16853-66 EWT(d)/EWT(1)/EWP(c)/EWP(v)/T/EWP(k)/EWP(1)/EWA(h)/ETC(m)-6
ACC NR: AM6004540 Monograph IJP(c) TG UR/

Gnedenko, Boris Vladimirovich; Belyayev, YUriy Konstantinovich; Solov'yev, Aleksandr Dmitriyevich

25

Mathematical methods in the theory of reliability; basic characteristics of reliability and their statistical analysis (Matematicheskiye metody v teorii nadezhnosti; osnovnyye kharakteristiki nadezhnosti i ikh statisticheskiy analiz) Moscow, Izd-vo "Nauka", 65. 0524 p. illus., biblio., index. Errata slip inserted. 27,000 copies printed.

Series note: Fiziko-matematicheskaya biblioteka inzhenera

TOPIC TAGS: mathematic method, statistic analysis, probability, reliability theory, quality control

PURPOSE AND COVERAGE: This book presents basic concepts of the mathematical methods in the theory of reliability and gives various plans for estimating characteristics of reliability from the results of tests. Also, methods for testing the hypothesis, the theory of reservation without reduction and with reduction, and methods of acceptance control are presented. The book contains supplementary tables. In the first chapter is an introduction to the theory of probability, mathematical statistics and Laplace transform. The book is recommended for mathematicians, engineers and students dealing with problems in the theory of probability. The section of the book concerning quality control of production is useful to those working in the field of technical control. 14

Card 1/2 UDC: 519.95

Card 2/2

L 2192-66 EWT(1)/EWA(h)

ACCESSION NR: AP5012071 UR/0375/65/000/001/0015/0023

AUTHOR: Gnedenko, B. V., Academician AN UkrSSR

15
B

TITLE: A problem in the theory of duplication

48-

SOURCE: Morskoy sbornik, no. 1, 1965, 15-23

TOPIC TAGS: reliability theory, reliability engineering, statistic mechanics

25

ABSTRACT: The author considers an emergency system with recovery using a single stand-by unit. The following conditions are assumed: 1) recovery begins shortly after failure of the working unit, and the operating characteristics are completely restored; 2) transition from the reserve state to the operating state is instantaneous; 3) the period of reliable operation of the unit is a random quantity and has the distribution $F(x) = 1 - e^{-\lambda x}$ at $x > 0$;

4) recovery time is a random quantity and has the distribution

$$G(x) = 1 - e^{-\nu x} \text{ at } x > 0;$$

5) the period of reliable reserve operation is a random quantity and has the distribution

$$H(x) = 1 e^{-\mu x} \text{ at } x > 0.$$

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L 2192-66
ACCESSION NR: AP5012071

The distribution of the period of reliable operation of the system and the average duration of reliable operation are found. The results are compared with the conclusions made by Belyayev and Gaver (Yu. K. Belyayev, "Line Markov Processes and their Application to the Problems of Reliability Theory", *Trudy VI Vsesoyuznogo soveshchaniya po teorii veroyatnostey i matematicheskoy statistike*, Vilna, 5-10 Sep 1960, Vilna, 1962, pp 309-323; D. P. Gaver, "Time to Failure and Availability of Paralleled Systems with Repair", *IEEE Transactions on Reliability*, Vol. R-12, No. 2, June 1963, 30-38). The cases of loaded (hot) and idle (cold) reserve systems are considered. It is found that if Poisson distribution is applicable to the failures, then whatever the distribution of the recovery period $G_v(x) = G_1(vx)$, where $\frac{1}{v}$ is the average recovery period, at large v the average period for reliable operation of a two-unit emergency system is close to that obtained on the assumption that $G(x) = 1-e^{-vx}$ for both hot and cold reserve systems. This conclusion is illustrated by calculations and tabulated data. Orig. art. has: 17 formulas, 4 tables.

ASSOCIATION: none
SUBMITTED: 00
ENCL: 00
SUB CODE: IE
NO REF SOV: 004
OTHER: 002
Card 2/2

GNEDENKO, B.V., akademik; POPOV, V. [illegible], kand. tekhn. nauk

Problem of the reliability of agricultural machinery. Trakt. i sel'khozmash no.6:21-24 Je '65. (MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet i AN UkrSSR (for Gnedenko).
2. Moskovskiy geologorazvedochnyy institut imeni Sergo Ordzhonikidze (for Popov).

GNEDENKO, B.V., akademik

Guaranty of the quality, reliability and durability in mass production and statistical investigation methods. Standartizatsiia 29 no.5:4-6 My '65. (MIRA 19:1)

1. Akademiya nauk Ukrainskoy SSR.

[illegible], V. I.

34092. Transportirovka pushnykh zverey ot Moskvy do Vladivostoka (Po zheleznoy doroge). Karakulevodstvo i zverovodstvo, 1949, No. 5, s. 52-55

SO: Knizhnaya, Letopis, Vol. 7, 1955

GNEDENKO, B. Vl. (Moskva); ANGELINOV, R. [translator], BONCHEV, E. [translator]

Training of a teacher of mathematics. Mat i fiz Bulg 7 no.4: 4-11 Jl-Ag '64.

[illegible], ... I.

2947. Elevator [illegible] dlya pogruzki kruglogo lesa. Les. prom-st' [illegible], No. [illegible]. 16-17

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

SOV/120-58-6-6/32

AUTHORS: Gnedich, A. V., Kryukova, L. N., Murav'yeva, V. V., ~~Shumshurov, V.~~ I.

TITLE: The Focussing of Electrons in a Spiral Spectrometer (Issledovaniye fokusirovki elektronov v spiral'nom spektrometre)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 41-45 and 1 plate (USSR)

ABSTRACT: The spiral spectrometer has been used to study the spectra of conversion and secondary electrons (Refs.1 and 2) and also to study μ- and π-mesons (Refs.3 and 4). Theoretical calculations on spiral spectrometers have been carried out at the Moscow State University (Refs.5 and 6) and also abroad (Refs.7 to 10). However, at the present time the theory of this type of spectrometer cannot be used to calculate accurately the form and size of the electron beam and the dispersion of this instrument in various regions in the magnetic field. In this connection it is of interest to obtain some experimental data on properties of the spectrometer. A photographic

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SOV/120-58-6-6/32

The Focussing of Electrons in a Spiral Spectrometer

method is described in the present paper. In a spiral spectrometer an axially symmetric transverse non-uniform magnetic field is used. The electron source is placed at the centre of the field while the recording device is at some distance from it, the distance being governed by the radius of the limiting plane trajectory. In the instrument investigated, the magnetic field was produced by cylindrical pole pieces 300 mm in diameter. The gap between the pole pieces was 82 mm. The fall-off of the field at the edges of the pole pieces was used. Fig.1 shows a graph of the dependence of the magnetic field on distance from centre as well as a plot of 1/r . As can be seen, the field falls off more rapidly than 1/r over an appreciable region, which is a necessary condition for a spiral spectrometer. The successive changes in the meridional section of the electron beam were studied when the beam traverses the magnetic field of the spectrometer. To get this beam profile the set-up illustrated diagrammatically in Fig.1 was used. An X-ray film camera, 4, was placed in the path of the beam and along the radius, as shown in Fig.2. An active deposit of Th served as the source of electrons. It was deposited on a copper wire 0.1 mm dia and 14 mm long in a vertical position. Con-

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SOV/120-58-6-6/32

The Focussing of Electrons in a Spiral Spectrometer

centrically with the source an aluminium screen was mounted. This screen was 30 mm dia and had a 3 x 14 mm^2 slit. This slit could be rotated without letting air into the chamber. By rotating the slit, the angle φ between the direction of exit and the X-ray camera could be varied. The results obtained are shown in Figs.3 and 6. It is concluded that in a spiral β-spectrometer there are 3 regions for the electron beam which can be used for spectrometric measurements. Fig. 9 shows conversion lines obtained with a counter, using a source 0.6 mm wide with a relative solid angle of 3.4×10^{-3} steradian. The relative half-width of the lines was 0.32% (F-line of ThB) and 0.37% (Ce^{144}, E = 92 KeV).

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SOV/120-58-6-6/32

The Focussing of Electrons in a Spiral Spectrometer

V. S. Shpinel' is thanked for valuable advice. There are 9 figures, 1 table and 10 references; 4 of the references are Soviet, 5 are English and 1 is Italian.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific Research Institute for Nuclear Physics, Moscow State University)

SUBMITTED: December 30, 1957.

Card 4/4

SOV/48-22-7-21/26

AUTHORS: Gnedich, A. V., Kryukova, L. N., Shumshurov, V. I. Murav'yeva, V. V., Shpinel', V. S.,

TITLE: On the Problem of Doppler Broadening of Lines of Conversion Electrons Emitted by Recoil Nuclei (K voprosu o dopplerovskom ushirenii liniy konversionnykh elektronov, ispuskayemykh yadrami otdachi)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 7, pp. 867 - 870 (USSR)

ABSTRACT: When Bi^{212} (ThC) decays by an emission of an α-particle to Tl^{208} (ThC"), this Tl nucleus exhibits a transition from an excited state with 40 keV to the ground state. The Doppler effect exhibited by these conversion lines is investigated. At first a plane source of infinite extension is investigated. The thickness of the slab exerts a considerable influence on the conversion lines. The shape of the conversion lines was investigated with a helical focusing-β-spectrometer. An active thorium deposit served as a source. The theoretical shape of the lines was computed under the assumption, that the mean life τ of the level of 40 keV is within the range $T < \tau < t$. (τ denotes the life of the excited state, and T the slowing-down period of the

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condition and in particular the thickness of the source. The life can also be estimated by determining the reduction of intensity of the lines due to the emission of recoil nuclei from the source, if the thickness of the source is known. The analysis of the line shape of the conversion spectrum of moving nuclei is also necessary for the estimation of the relative intensities of the conversion lines. There are 5

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On the Problem of Doppler Broadening of Lines of Conversion Electrons Emitted by Recoil Nuclei SOV/48-22-7-21/26

figures and 9 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gos. universitet im.M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

Card 3/3

21(8)

AUTHORS: Gnedich, A. V., Kryukova, L. N., Murav'yeva, V. V. SOV/56-36-1-53/62

TITLE: On the 100 kev Transition in the Spectrum of Ce^{144} (O perekhode 100 keV v spektre Ce^{144})

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, p 329 (USSR)

ABSTRACT: The scheme of the Ce^{144} - Pr^{144} decay has hitherto not been determined. The conversion transitions between some levels of the nucleus Pr^{144} on various shells give very similar electron lines. This property of the conversion spectrum of Ce^{144} complicates its interpretation and raises doubts as to the existence of some transitions. The authors investigated the conversion spectrum of Ce^{144} by means of a spectral β-spectrometer having a resolving power of 0.25 %. A diagram shows the conversion line of the energy 57.7 kev. The half-width of this line is greater (0.63 %) than the other lines of this spectrum. This fact and the shape of the line prove its complexity. A graphic analysis of this line gave 2

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On the 100 kev Transition in the Spectrum of Ce^{144} SOV/56-36-1-53/62

components which correspond to the energies 57.76 and 57.45 kev. This energy values agree well with those of K-100 and M-59, and they confirm the existence of both transitions. The authors separated out also the line L_1-100, E_e = 92.83 kev. According to the results of the present investigation, the energy of the 100 kev transition has the exact value (99.7±0.1) kev. There are 1 figure and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: September 22, 1958

Card 2/2

GNEDICH, A.V.; KHYUKOVA, L.N.; MURAV'YEVA, V.V.

Relative intensities of gamma transitions in strongly deformed nuclei. Zhur.eksp.i teor.fiz. 38 no.3:726-728 Mr '60. (MIRA 13:7)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.
(Gamma rays) (Nuclear reactions)

GHEDIG, N., inzh.

The Kazincbarcika Storehouse for Chemical Fertiliziers. Tekhnika Bulg 2 no.4:25-29 Ap '53.

GNEDIN, A. (Lt. Col.)

"Anti-Atomic Defense of Personnel and Aviation Materiel," Vest. Vozd. Flota, No.5, 1955

Summary translation D 295114, 9 Aug 55

GNEDIN, A. and RUBKOV, R.

"Anti-Atomic Protection in Aviation" an article in the Publication, Problems of the Use of Atomic Energy. October, 1956., Moscow

SPRYSKOV, A.A.; GNEDIN, B.G.

Orientation in the substitution in the aromatic series. Part 10: Sulfuration of toluene at low temperatures. Zhur.ob.khim. 33 no.4: 1082-1085 Ap '63. (MIRA 16:5)
(Toluene) (Sulfuration)

SPRYSKOV, A.A.; GNEDIN, B.G.

Sulfonation reaction. Part 58: Analysis of sulfo mixtures obtained in phenol sulfonation. Izv.vys.ucheb.zav.;khim. i khim.tekh. 7 no. 1:61-65 '64. (MIRA 17:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra organicheskoy khimii.

SPRYSKOV, A.A.; GNEDIN, B.G.

Study of the sulfonation reaction. Part 59: Sulfonation of phenols at low temperatures. Izv.vys.ucheb.zav.; khim.i khim.tekh. 7 no.6: 935-940 '64. (MIRA 18:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra organicheskoy khimii.

SPRYSKOV, A.A.; GNEDIN, B.G.

Orientation in the substitution in the aromatic series. Part 18: Sulfonation of phenol with chlorosulfonic acid in solvents. Zhur. org. khim. 1 no.11:1946-1950 N '65. (MIRA 18:12)

1. Ivanovskiy khimiko-tekhnologicheskiy institut. Submitted November 16, 1964.

KUSTOV, S.;GNEDIN, I.; VEDERNIKOV,K.

Use funds for capital repairs more efficiently. Den. i kred.
18 no.12:47-51 D'60. (MIRA 13:11)

1. Zamestitel' upravlyayuschego Kiyevskoy oblastnoy kontoroy Gosbanka.(for Kustov). 2. Rukovoditel' kreditnoy gruppy Ikryaninskogo otdeleniya Gosbanka Astrakhanskoy oblasti (for Gnedin). 3. Nachal'nik proizvodstvenno-ekspluatatsionnogo otdela Gomel'skoy kontory Gosbanka (for Vedernikov).
(Banks and banking) (Construction industry--Finance)

18.3100A

S/136/61/000/001/002/010
E193/E583

AUTHORS: Parfanovich, B. V., Gnedin, I. I. and Yerofeyev, D. I.

TITLE: Methods of Suspension of Continuous Self-Baking Electrodes in Cells for Electrolytic Extraction of Aluminium

PERIODICAL: Tsvetnyye metally, 1961, No. 1, pp. 48-52

TEXT: For the last 25 years, the most widely used system of suspension of self-baking electrodes, has been the "Wisdom" system, based on the application of a band-brake mechanism. In addition to other short-comings, this system is manually operated and, as such, does not lend itself to automation. A system, developed recently both in the Soviet Union ("Gipronikel" and "Giprostal'" Institutes) and in Germany (Demag), and based on the application of pneumatically operated, split steel bushings with rubber-coated working surfaces, is free from these disadvantages. The principle of this system is illustrated in the figure reproduced below which shows:
1 - electrode; 2 - bellows-operated clamps of the current leads;
3 - split bushings with pressurized rubber tyres; 4 - air cylinder;
5 - pressure regulator; 6 - pressure gauge; 7 - 3-way valves;
8 - springs. (The insert in the right-hand corner of the illustra-

Card 1/4

S/136/61/000/001/002/010
E193-E583

Methods of Suspension of Continuous Self-Baking Electrodes in Cells for Electrolytic Extraction of Aluminium

illustration shows the position of the 3-way valves (1) when the electrode is stationary, (2) when it is being lowered down, and (3) when the top split bushing is being returned to its original position).

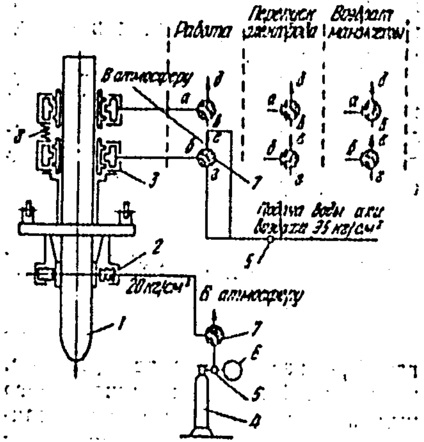

Fig. 2

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S/136/61/000/001/002/010
E193/E583

Methods of Suspension of Continuous Self-Baking Electrodes in Cells for Electrolytic Extraction of Aluminium

During normal operation of the cell, the electrode is stationary, being held in position by the two split bushings, pressed firmly against the upper part of the electrode shell by the action of the pressurized rubber tyres. In order to lower the electrode into the bath, pressure in the bottom tyre is released and the electrode, gripped by the upper bushing only, slides down under its own weight until its movement is arrested by stops incorporated in the bottom bushing. The lower bushing is then made to grip the electrode by applying pressure to its tyre, pressure in the tyre of the upper bushing is released, and the upper bushing is returned by the action of the springs to its initial position, preparatory to the next lowering operation. An empirical formula for the force, required to grip the electrode of a given size, has been derived by the present authors, and a table has been compiled, giving the main characteristics (dimensions of the split bushings, pressure in the rubber tyres and bellows, etc.) of the mechanism discussed for electrodes ranging in size from 650 to 1400 mm

Card 3/4

S/136/61/000/001/002/010
E193/E583

Methods of Suspension of Continuous Self-Baking Electrodes in Cells for Electrolytic Extraction of Aluminium

in diameter. There are 2 figures, 1 table and 3 references: 2 Soviet (1 a translation) and 1 non-Soviet.

ASSOCIATION: VAMI, Gipronikel'

Card 4/4

GNEDIN,K.I.

Tectonic structure of northern Sakhalin. Trudy Akad. neft.
prom. no.2:138-142 '55. (MIRA 8:5)
(Sakhalin--Geology, Structural)

ALEKSEYCHIK, Stepan Nikolayevich;pri uchastii sleduyushchikh: GAL'TSEV-BEZYUK, S.D.; GNEDIN, K.I.; ZAYTSEV, S.M.; KIRICHEK, M.A.; KOZLOV, A.L.; PURKIN, L.B.; RATNER, V.Ya.; RATNOVSKIY, I.-'.; RAKHMANOV, K.F.; TABOYAKOV, A.Ya.; TSITENKO, N.D.; GOLUBKOV, I.A., nauchnyy red.; KELAREV, L.A., vedushchiy red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Geology and gas and oil potentials of northern Sakhalin] Geologicheskoe stroenie i gazoneftenosnost' severnoi chasti Sakhalina. Leningrad, Gos. nauchn. -tekh.izd.-vo neft. i gorno-toplivnoi lit-ry Leningr. otd-nie, 1959. 226 p. (Leningrad.Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no.135).

(Sakhalin--Petroleum geology)
(Sakhalin--Gas, Natural--Geology)

Гнедин Л. П.

110-9-16/23

AUTHOR: Gnedin, L.P., Candidate of Technical Sciences, Dartau, A.A., Engineer and Dembo, A.R., Candidate of Technical Sciences.

TITLE: A System of Frequency-control for Induction-type Traction Motors for Locomotives. (Sistema chastotnogo upravleniya asinkhronnymi tyagovymi elektrodvigatelyami lokomotivov)

PERIODICAL: Vestnik Elektropromyshlennosti, 1957, Vol.28, No.9, pp. 59 - 65 (USSR)

ABSTRACT: The light weight, simplicity of construction and reliability in operation of squirrel-cage induction motors as compared with direct-current motors are great advantages which offer considerable promise for electric traction. Existing electric locomotives of the single-phase three-phase type with squirrel-cage induction motors (made by Oerlikon for the Valenciennes-Thionville section of the French Railways) do not have sufficient starting torque because there is no way of controlling the voltage on the traction motors. This defect can be overcome if compensated commutator generators with independent excitation are used as variable frequency generators. The two-phase systems in the ИЗМ circuit (invented by M.P. Kostenko and V.N. Andreyev) consists of two single-phase commutator generators that can be made with good commutation over the wide frequency range of 0 to 80 c/s and are recommended as a variable frequency

Card1/4

110-9-16/23

A System of Frequency-control for Induction-type Traction Motors for Locomotives.

generator system for electric traction. The circuit is given in Fig.1. The voltage from the overhead wire passes to a step-down transformer and thence to a single-phase synchronous motor mounted on the same shaft as two single-phase compensated commutator generators, a synchronous motor exciter and an auxiliary d.c. generator. The commutator generators are excited by a two-phase synchronous exciter. The commutator generators form a symmetrical two-phase system which is used to supply the traction motors. This ЧЭ М circuit can give any required traction motor power curve depending on the speed of the locomotive. It has a high power factor and can be used for regenerative braking. A connection diagram of the parallel windings of the commutating poles of the generators is shown in Fig.2. The commutating e.m.f. are in counter-phase with the corresponding transformer e.m.f. in the short-circuited sections. This is explained by reference to the vector diagram Fig.3. Design of compensated commutator generators shows that the excitation power is rather high but it can be reduced to 2-5% of the rated power by using resonance connection of the field windings. The corresponding circuit is shown in Fig.4. and the

Card 2/4 mode of operation is explained with reference to the vector

110-9-16/23

A System of Frequency-control for Induction-type Traction Motors for Locomotives.

diagram, Fig.5. The resonance connection of field windings was investigated experimentally on a 40 kVA 3-phase generator running at a speed of 2 500 r.p.m. at 170 V and on a two-phase system consisting of two single-phase 1.2 kVA generators of 2 000 r.p.m. and 120 V. The experimental characteristics of the normal and resonance field winding connections of the three-phase generator are shown in Figs. 6A and B and 7A and B. The curves show that the resonance point was near 42 c/s. Characteristics of the excitation circuit of a two-phase generator system at the resonance frequency is shown in Fig.8. The curves show that at a frequency of 50 c/s the use of the resonance circuit reduces the total excitation power by a factor of 3.8 and the reactive excitation power by a factor of nearly five. To compare the weights of the electrical equipment of electric locomotives of the single-phase two-phase type OΔ and of the ignitron type OP, comparative designs were made for the main machines of corresponding locomotives with total traction motor power of 2 400 kW. The main data for the two locomotives are compared in Table 1, showing that the a.c. traction motors are only half the weight of the corresponding d.c. motors. The

Card3/4 overall weight of the electrical equipment for locomotive type OΔ

AUTHORS: Kostenko, M.P., Alekseyev, A. Ye., SOV/105-58-7-30/32
Lyuter, R.A., Zavalishin, D. A.
Gnedin, L. P., Britsin, M. L.

TITLE: Leonid Nikolayevich Gruzov (Deceased)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp. 93-95 (USSR)

ABSTRACT: Professor Leonid Nikolayevich Gruzov, Doctor of Technical Sciences, Engineer-Colonel, Head of the Kafedra elektropitaniya ustanovok svyazi Voyennoy krasnoznamennoy akademii svyazi (Department of Electric Supply of Telecommunication Equipment at the Krasnoznamennaya Military Academy of Telecommunication) a prominent expert in the field of electric machines, died on October 17th, 1957, at the age of 51. He graduated with distinction from the Donskoy politekhnicheskiy institut (Don Polytechnical Institute) in 1927, was then aspirant at the Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute), assistant, and finally docent at the same institute. He combined his scientific and pedagogical activity with that of an engineer. He published a series of papers on the transient modes of operations of electric machines and of power supply systems.

Card 1/2

Leonid Nikolayevich Gruzov SOV/105-58-7-30/32

He worked as engineer in the "Elektrosila" works as well. He took part in World War II. In 1947 he took his degree as Doctor of Technical Sciences. He developed a method for the investigation of electric machines. He was first head of the Department of Theoretical Electrical Engineering, then of the Department of Electric Supply Plants at the Military Academy of Telecommunication. He published more than 30 scientific papers, textbooks and manuals. There is 1 photograph.

1. Scientific personnel--USSR

Card 2/2

PHASE I BOOK EXPLOITATION SOV/4706

Akademiya nauk SSSR. Institut elektromekhaniki

Sbornik rabot po voprosam elektromekhaniki, vyp. 4: Elektricheskiye mashiny, elektricheskiy privod, elektricheskaya tyaga na peremennom toke, avtomatizirovannyy elektroprivod teleskopov, avtomaticheskoye regulirovaniye i pribory (Collection of Works on Problems in Electromechanics, No. 4: Electric Machines, Electric Drive, A-C Electric Traction, Automated Electric Drive of Telescopes, Automatic Regulation and Instruments) Moscow, 1960. 282 p. 5,500 copies printed.

Resp. Ed.: V. V. Sidel'nikov; Ed. of Publishing House: L. V. Suvorov; Tech. Ed.: R. A. Zamarayeva.

PURPOSE: This collection of works is intended for specialists in electromechanics.

COVERAGE: The collection contains 28 works divided into three sections: 1) Electric Machines, 2) Electric Drive and Electric Traction; 3) Automated Electric Drive, and Automatic Regulation and Instruments. No personalities are mentioned. References accompany most of the articles.

Danilevich, Ya. B. Computation of Leakage From the Tips of the Teeth in Electric Machines 33

Sukhanov, L. A. Special Features of Computation of No-Load Run Characteristics and of Certain Parameters of Standard Turbogenerators 37

Sirotko, V. K., and G. B. Smolin. Computation of Short-Circuit Resistances of Standard Transformers 45

[illegible], V. Ye., and S. S. [illegible]. Problem of Electric Braking of Synchronous Generators 56

Karpov, G. V. Improvement in Accuracy of the Experimental Determination of Losses in Synchronous Machines 62

Ruzharskiy, E. G. Problem of Designing the Magnetic Circuit of an Electric Machine Made of Anisotropic Steel 76

Gaydin, L. P. Hunting Moment of Selsyn Servodrive in an Induction System of Synchro-Tied Transmission With a Commutator Generator 82

ELECTRIC DRIVE. ELECTRIC TRACTION

Kovalishin, B. A., and B. P. Gubanov. Electronic-Ionic Converter of Single-Phase Current at Commercial Frequency Into Three-Phase Current, at Variable Frequency for Speed Regulation of Induction Electric Motors 92

Rudakov, V. N., and V. K. Nasedov. Simulation of Excitation Circuits of D-C Machines in Electrodynamic Simulators of Drive Systems 105

[illegible], V. N. Distribution of Flux Density in the Air Gap of Multistage Longitudinal-Field Rotating Amplifiers 112

[illegible], G. V. General Rules and Methods of Investigating Steady and Transient Conditions in a Circuit of Single-phase Mercury-Arc Rectifier of an Electric Locomotive 122

Zakharevich, S. V., and V. A. [illegible]. Investigation of Transients in the Circuit of a Single-Phase Mercury— Arc Rectifier of an Electric Locomotive During Backfire and Misfiring of Rectifier Tubes 134

Lomkin, V. M. Single-Phase Series Commutator Traction Motor For an Electric Locomotive and Electric-Motor-Car Train 146

GAEDIN, L. P.

GILDIN, L.P.

Current and moments in an inductive synchronous transmission system with a compensated collector generator. Trudy LPI no. 209:401-411 '60. (MIRA 14:2)
(Servomechanisms)

GNEDIN, L.P. (Leningrad); KOSTENKO, M.P. (Leningrad)

Modification of induction system schematics of synchronous transmission. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.4:24-31 Jl-Ag '62. (MIRA 15:8)

(Servomechanisms)

GNEDIN, L.P., doktor tekhn.nauk; PROZOROV, V.A., kand.tekhn.nauk

Use of compensated collector-type generators in ship alternating current systems. Sudostroenie 28 no.7:39-40 Jl '62. (MIRA 15:8)

(Electricity on ships)

BOBROV, Yu.A.; VOLKOVA, Ye.A.; GNEDIN, L.P.

Study of a three-phase collector-type generator with series excitation operating as an ohmic loss compensator in electrodynamic model systems in symmetrical operating modes. Sbor.rab.po vop. elektromekh.no.8:302-310 '63.

(MIRA 16:5)

(Electric generators) (Electric power distribution--Models)

GNEDIN, L.P.

Asynchronous operation of a selsyn in a system with a collector-type generator. Sbor.rab.po vop.elektromekh.no.8:310-318 '63. (MIRA 16:5)

(Servomechanisms)

BUYEVICH, V.V.; GNEDIN, L.P.; KOVALENKO, V.P.

High-speed networks for compensating the brake action of excess losses and moment of inertia in a synchronous model generator. Sbor.rab.po vop.elektromekh.no.8:318-326 '63.

(MIRA 16:5)

(Electric generators) (Rotating amplifiers)

KOSTENKO, Mikhail Poliyevktovich; GNEDIN, Leonid Pavlovich;
DEMBO, A.R., otv. red.; KUZ'MINA, M.O., red.izd-va;
SOROKINA, V.A., tekhn. red.

[Theory and design of three-phase collector machines and cascade systems] Teoriia i raschet trekhfaznykh kollektornykh mashin i kaskadnykh sistem. Moskva, Izd-vo "Nauka," 1964. 379 p. (MIRA 17:4)

KOSTENKO, M.P., akademik; GNEDIN, L.P., doktor tekhn. nauk

Electrical machines with low power rating. Elektrotekhnika 36 no.8:1-3 Ag '65. (MIRA 18:9)

GNEDIN, M.

State Bank credits and technological progress. Den.i kred.
18 no.1:58-60 Ja '60. (MIRA 13:1)
(Ikryanoye District--Fisheries--Finance)
(Machinery industry)

GYEDIN, N.I.

Ca

21

PROCESSES AND PROPERTIES INDEX

Investigation of the coal of the XXII-seam of the Belovo-Babanakov field of the Kuzbass region. N. I. Gaedin. Coke and Chem. (U. S. S. R.) 11, No. 8, 11-12(1941); Chem. Zentr. 1942, I, 1127.—The coal was analyzed for elementary compn., plastic properties, hardness, and coking properties both by itself and in blends. The coal possesses good coking properties. Glenn C. Soth

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GNEDIN, N.I.

Experimental coking of coals from certain seams of the Sayan Partizanskoye region in the Kan Basin. Trudy Khim.-met. inst. Zap.-Sib. fil. AN SSSR no.10:31-37 '57. (MIRA 11:6)
(Kan Basin--Coke)

1. GNEDIN, S. I.

2. USSR (600)

4. Soviet Far East - Meadows

7. Quicker creation of cultivated meadows in the Far East by rototilling, Form. baza, 3, No. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

GNEDIN, Sergey Ivanovich, kand.sel'skokhozyaystvennykh nauk; FOKIN, V.V., red.; KAYDALOVA, M.D., tekhn.red.

[Mechanization of potato and vegetable gardening in the Far East] Mekhanizatsiia vozdelyvaniia kartofelia i ovoshchei na Dal'nem Vostoke. Khabarovskoe knizhnoe izd-vo, 1957. 99 p. (MIRA 12:7)

(Soviet Far East--Vegetable gardening)

COUNTRY : USSR

CATEGORY : Meadow Cultivation. L

ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10335

AUTHOR : Platonov, F. I., Gnedin, S. I.

INST. : The Far Eastern Scientific Research Institute of Agricul-*)

TITLE : Improvement of Meadows and Pastures in the Far East.

ORIG. PUB. : Byul. nauchno-tekhn. inform. Dal'nevost. n.-i. in-ta s.kh. 1957, 3, 24-28.

ABSTRACT : No abstract.

CARD:

*) ture.

22(1)

SOV/27-59-4-6/28

AUTHOR: Gnedin, V., Deputy School Director

TITLE: Urgent Problems

PERIODICAL: Professional'no-tekhnicheskoye obrazovaniye, 1959, Nr 4, pp 9-10 (USSR)

ABSTRACT: The new problems facing vocational-technical education cannot be solved unless a number of antiquated regulations have been changed. In this connection suggestions were submitted at a recent pedagogical conference of school workers of Kiyevskoye oblastnoye upravleniye trudovykh rezervov Kiyev Oblast' Administration of Labor Reserves) which are worthy of attention. It would be expedient to determine now which schools will be converted into vocational-technical schools in 1959 and 1960, their size and terms of schooling. Simultaneously, the enlargement of vocational-technical schools and establishment of school-factories should be contemplated. These are the necessary prerequisites for transferring the schools to partial self-support and to radically raise the quality of skilled workers. The author further believes

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SOV/27-59-4-6/28

Urgent Problems

that the practice of planning production one year ahead should be given up. The production and enrolment plan should cover a period of 2 to 3 years. At the author's trade school, the production list has been changed for the last 6 to 7 years almost every year. The school manufactured PM-75 pneumatic hammers, screw-cutting lathes 1615A, 1615M, 1-T-61M, PKTR-3 pressboard presses and automatic electric welding tips. This type of production deprived the school of an opportunity to improve the technology of production, to increase profit and to work on strictly planned lines. It is further necessary to arrange that a minimum of overhead expenses be charged by the base enterprises to the schools. One measure to increase profitableness and to place the school on a self-supporting basis is to avoid employing any substantial number of skilled adult workmen. It would be more expedient to somewhat increase the number of engineering personnel, especially where complicated items are being manufactured. In the author's school, with 350 to 400 students, there is only one engineer

Card 2/3

GNEDIN, V.

Interesting idea. Prof.-tekh.obr. 21 no.3:11 Mr '64.
(MIRA 17:4)

1. Zamestitel' direktora professional'no-tekhnicheskogo uchilishcha No.2 Kiyeva.

GNEDIN, V.N.

Some results of five years of experience. Politekh.obuch. no.12:13-15 D '59. (MIRA 13:5)

1. Remeslennoye uchilishche No.2, Kiyev.
(Kiev--Vocational education)

VATOLIN, Yevgeniy Stepanovich; GNEDIN, V.Ye., redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor

[Generalizing experience in conducting preparatory mine work] Obobshchenie opyta provedeniia podgotovitel'nykh vyrabotok. Moskva, Ugletekhizdat, 1955. 50 p. (MIRA 9:3)
(Kizel Basin--Coal mines and mining)

LIDIN, Georgiy Dmitriyevich, nauchnyy sotr.; AYRUNI, Arsen Tigranovich, nauchnyy sotr.; KLEBANOV, Feliks Semenovich, nauchnyy sotr.; MATVIYENKO, Nikolay Grigor'yevich, nauchnyy sotr.; GNEDIN, V.Ye., otv. red.; SMIRENSKIY, M.M., red. izd-va; IL'INSKAYA, G.M., tekhn. red.

[Controlling accumulations of methane in coal mines] Bor'ba so skopleniiami metana v ugol'nykh shakhtakh. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 140 p. (MIRA 15:1)

1. Institut gornogo dela im. A.A.Skochinskogo (for Lidin, Ayruni, Klebanov, Matviyenko).

(Mine gases)

GNEDIN, Ye.

Legend of the free market economy ("Theory and practice of neo-liberalism. Legend of the free or social market" [in German] by Robert Naumann. Reviewed by E. Gnedin). Vop. ekon. no.8:128-134 Ag '58. (MIRA 11:9)

(Germany, West--Economic policy)
(Naumann, Robert)

GNEDIN, Ye.

Bankruptcy of the right-wing socialist programs. Vop. ekon.
no.10:108-117 O '61. (MIRA 14:10)
(Socialist parties)

GNEDIN, Ye.

Imperialist "integration" and the contradictions of capitalism.
Vop. ekon. no.12:79-93 D '62. (MIRA 16:1)

(Europe—Economic integration)

GNEDIN, Yu.N.; DOLGUNOV, A.Z.

Multiple scattering theory. Zhur. eksp. i teor. fiz. 45 no.4:
1136-1149 O '63. (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR.

L 42409-65 EWT(l)

ACCESSION NR: AP5006504 S/0056/65/048/002/0548/0560

12
9
33

AUTHOR: Gnedin, Yu. N.; Dolginov, A. Z.

TITLE: Theory of multiple scattering. II.

21

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 2, 1965, 548-560

TOPIC TAGS: multiple scattering, inelastic scattering, anisotropic scattering, transport equation, force center, plane layer scattering

ABSTRACT: This is a continuation of an earlier study of isotropic multiple scattering by spherical bodies (ZhETF v. 45, 1136, 1963) and deals with multiple scattering of particles or quanta in the case when the cross section for the scattering by an individual force center is anisotropic, and the scattering body has the form of a flat layer. This case is of interest to the solution of many problems in atomic and nuclear physics, astrophysics, and physics of turbid bodies. An explicit expression is derived for the distribution of the multiply scattered particles outside and inside the body. The transport equation is solved in ex-

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ACCESSION NR: AP5006504

plicit form for cases when the expansion of the cross section in terms of Legendre polynomials has a finite number of terms, and when the cross section has a sharp peak at small angles (Coulomb scattering). The solution contains terms that are due to poles of the kernel of the integral equation employed, to its branch points or to crossing terms that depend on both. The pole terms are evaluated exactly, while various approximations are considered for the branch-point terms. These approximations are in terms of the parameters of the theory (the inelasticity of the scattering, the mean multiplicity of scattering with account of absorption, and the ratio of the layer thickness to the mean free path prior to absorption). The approximate results are accurate to a few per cent. Orig. art. has: 60 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences SSSR)

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: NP

NO REF SOV: 003 OTHER: 003

Card 2/2

GNEDIN, Yu.N.; DOLGINOV, A.Z.

Theory of multiple scattering. Part 2. Zhur. eksp. i teor. fiz. 48 no.2:548-560 F '65. (MIRA 18:11)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR.

GNEDIN, Yu.N.; DOLGINOV, A.Z.

Distribution of particles in the head of a comet. Astron. zhur. 43 no. 1:181-191 Ja-F '66 (MIRA 19:2)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR. Submitted March 12, 1965.

L 22671-66 EWT(1) GW

ACC NR: AP6006783 SOURCE CODE: UR/0033/66/043/001/0181/0191

44
55
B

AUTHORS: Gnedin, Yu. N.; Dolginov, A. Z.

ORG: Physico-Technical Institute im. A. F. Ioffe, Academy of Sciences SSSR (Fiziko-tekhnicheskiy in-t Akademii nauk SSSR)

TITLE: Particle distribution in a comet head

12,55

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 1, 1966, 181-191

TOPIC TAGS: comet, particle distribution, solar radiation, dissociated gas, spectral line, photoionization

ABSTRACT: Equations are obtained for neutral and charged particle distributions in a comet head. The neutral particle gas distribution is described by the transport equation

$$\frac{\partial N}{\partial t}+v\frac{\partial N}{\partial r}+b\frac{\partial N}{\partial v}=S-\beta N,$$

where b is particle acceleration under solar attraction and radiation pressure and S is the particle source strength. For a Maxwellian particle velocity distribution function, the solution of the above equation yields

Card 1/3 UDC: 523.66

L 22671-66

ACC NR: AP6006783

$$N(\mathbf{r}, t) = G_0(t) \exp(\alpha b r) \Phi_3(r, \beta, b);$$

$$\Phi_m(r, \beta, b) = \int_0^\infty d\tau\, \tau^{-m} \exp\left[-\beta\tau - \frac{\alpha r^2}{\tau^2} - \frac{\alpha}{4} b^2 \tau^2\right].$$

For various values of the $\alpha b/r$ ratio, closed form solutions are obtained which indicate that all particle density distributions arrived at by the above assumptions differ significantly from other known comet solutions. The situation is improved if one assumes the velocity distribution

$$G(v_0, t_0) = (2\pi v_p^{-1}) G(t_0) \delta(v^2 - v_p^2)$$

instead of the Maxwellian assumption. Similar expressions are derived for photodissociation and photoionization results. The probability of molecular dissociation is given by

$$W_\nu(\mathbf{p}_1, \mathbf{p}_2, \mathbf{p}_3) = c n_\nu(R_0) \sigma_\nu \sqrt{\frac{m_1^3}{2 m_2^3 m_3^3 (h\nu - \varepsilon)}} \times$$

$$\times \delta(\mathbf{p}_1 + \mathbf{p}_\gamma - \mathbf{p}_2 - \mathbf{p}_3) \delta\left(\frac{p_1^2}{2m_1} + h\nu - \frac{p_2^2}{2m_2} - \frac{p_3^2}{2m_3} - \varepsilon\right).$$

Particle distributions are obtained for $\sqrt{\alpha}\, u_\nu \ll 1$ and $\sqrt{\alpha}\, u_\nu \gg 1$, where

$$u_\nu^2 = \frac{2m_3}{m_1 m_3} (h\nu - \varepsilon).$$

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ACC NR: AP6006783

Those results show that the particle distribution in the comet head falls as a function of r^{-m}, where m depends on the nature of the particle, its initial velocity, acceleration, etc. In the last analysis, the observed optical signature of the comet is analyzed along different spectral lines and is applied to the case of the Berngem comet (1959). The authors express sincere thanks to academician B. P. Konstantinov, on whose initiative this work was undertaken. Orig. art. has: 55 equations, 1 figure, and 1 table.

SUB CODE: 03,20 SUBM DATE: 12Mar65/ ORIG REF: 003/ OTH REF: 002

Card 3/3

L 02448-67 EWT(1)/T IJP(c)

ACC NR: AP6028793 SOURCE CODE: UR/0033/66/043/004/0800/0812

AUTHOR: Gnedin, Yu. N.; Dolginov, A. Z.

47
B

ORG: Physical and Technical Institute, Academy of Sciences, SSSR (Fiziko-tekhnicheskiy in-t Akademii nauk SSSR)

TITLE: Radiative transfer in a medium of finite dimensions

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 4, 1966, 800-812

TOPIC TAGS: radiative transfer, Maxwell equation, scattering, indicatrix, multiscattering, PARTICLE SCATTER, PHOTON SCATTERING, SCHROEDINGER EQUATION

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ABSTRACT: Equations for the intensity of scattered particles and photons inside and outside a medium of finite dimensions are obtained from the Maxwell and Schroedinger equations. Approximations at which these equations coincide with the known transfer equation are indicated, and the connection between various forms of the latter equation is considered. The proposed form of the equation is convenient for the study of scattering in bodies of different geometrical shapes. The solutions of the equation are obtained in an explicit analytical form for multiscattering in a plane layer or a spherical volume. Isotropic and sharply anisotropic indicatrices for scattering on a single particle are discussed. Orig. art. has: 63 formulas. [CS]

SUB CODE: 20 / SUBM DATE: 05Jul65/ ORIG REF: 005/ OTH REF: 003

Card 1/1 jd UDC: 523.035.2

GNEDINA, A.G.

New Foraminifera species from Barremian sediments in the northwestern
Caucasus. Trudy KF VNII no.6:184-185 '61. (MIRA 15:2)
(Pshekha Valley--Foraminifera, Fossil)

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TITLE: Criterial formula for critical heat load in subcooled liquids under forced flow

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 8, 1964, 3-8

TOPIC TAGS: heat transfer, boiling, forced flow, buoyancy, ammonia, ethyl alcohol, Reynolds number

ABSTRACT: The critical heat flow conditions in water, ammonia, and ethyl alcohol in forced flow were investigated analytically and experimentally. Combining the critical boiling condition $d_0^2 n Z \tau_p = C$,

with the specific heat flux in boiling

$$q \sim \rho c_p d_0^3 \Delta t_{cp} n Z,$$

a general expression is derived for q(critical). The expression is given in terms of the similarity parameters

$$\tau_n \sim \frac{d_0}{U_0} f\left(\frac{U_0}{W}, \frac{\rho U_0 d_0}{\mu}, \frac{\mu c_p}{\lambda}, \frac{c_p T_s}{r}, \frac{\rho}{\rho_n}\right),$$

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where gravity effects and buoyancy effects are neglected in the moving fluid. Buoyancy and surface tension constitute the force field on the vapor bubbles. In its final form the general expression for q(critical) yields

$$\frac{q_{cr}}{\rho c_p (aT_s - T_{zh}) U_0} = 1{,}9 \cdot 10^{-3} \left(\frac{\rho U_0 d_0}{\mu}\right)^{0.2} \left(\frac{W}{U_0}\right)^{0.55}.$$

The indices 0.2 and 0.55 in the above equation were selected from experimental data taken in water, ammonia, and ethyl alcohol under high pressure on the order of 200 psia and in tubes varying in diameter from 1 to 12 mm by I. T. Alad'yev and L. D. Dodonov (Sb. "Luchisty*y i konvektivny*y teploobmen" Izd. AN SSSR, 1960), A. P. Ornatskiy (Teploenergetika, No. 6, 1960; No. 2, 1963), A. P. Ornatskiy and A. M. Kichigin (Same, No. 2, 1961), and D. R. Bartz (Jet Propulsion, 28, No. 1, 1958). Orig. art. has: 7 formulas, 3 figures, and 1 table

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AREF'YEV, K.M.; GNEDINA, I.A.

Criterional formula for critical heat loads in forced motions of an undercooled liquid. Inzh.-fiz. zhur. 7 no.8:3-8 Ag '64.
(MIRA 17:10)

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